

# COPY FROM PARENT

(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	Complete if Known <u>10/773,601</u>	
	Application Number	<del>10/103,450</del> <u>not yet known</u>
	Filing Date	<del>March 20, 2002</del> <u>February 6, 2004</u>
	First Named Inventor	<u>M into Hiroshi Kumagai</u>
	Group Art Unit	<u>1636</u>
	Examiner Name	<u>Terry Alan McKelvey</u>
	Attorney Docket Number	<del>60-002239US</del> <u>60-002234US</u>
Date Submitted	<del>February 27, 2003</del> <u>February 6, 2004</u>	

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
<u>DMC</u>	AA	5,316,930		Loesch-Fries et al.	05/31/1994	
<u>↓</u>	AB	5,316,931		Donson et al.	05/31/1994	
<u>↓</u>	AC	5,922,602		Kumagai et al.	07/13/1999	

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No.	Include name of the author (In CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T
DMC	AD	Helene et al., Biochim. Et Biophys. Acta, 1990, vol. 1049, pp. 99-125			
	AE	French et al., Science, vol. 231, pp. 1294-1297			
	AF	Brisson et al., Expression of a bacterial gene in plants by using a viral vector, Nature, vol. 310, August 9, 1984			
	AG	Lehto et al., Virology, 1990, vol. 175, pp. 30-40.			
↓	AH	Stein et al., Science, Aug. 20, 1993, vol. 261, pp. 1004-1011.			

Examiner Signature	<u>Terry A. McKelvey</u>	Date Considered	<u>7/25/04</u>
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Sheet 1 of 2

10/773,601  
Pat. No. known

## LIST OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO. 60-008284US  
8129-000-333 60-002233USSERIAL NO.  
10/103,450  
00/200,546

APPLICANT

Kumagai et al.

FILING DATE

March 20, 2002  
June 10, 1994 February 6, 2004

GROUP

AHA-1636

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Jmc	AA	5,107,065	April 21, 1992	Anti-Sense Regulation of Gene Expression in Plant Cells			
↓	AB	5,231,020	July 27, 1993	Genetic Engineering of Novel Plant Phenotypes			

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
Jmc	AC	WO 93/03161	February 18, 1993	PCT				

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

Jmc	AD	Rothstein, Steven J. et al. "Stable and heritable inhibition of the expression of nopaline synthase in tobacco expressing antisense RNA". <u>Proceedings of the National Academy of Sciences, USA</u> 84:8439-8443 (1987).
↓	AE	Smith, C.J.S. et al. "Antisense RNA inhibition of polygalacturonase gene expression in transgenic tomatoes". <u>Nature</u> 334: 724-726 (1988).
↓	AF	Jorgensen, Richard. "Altered gene expression in plants due to <i>trans</i> interactions between homologous genes". <u>Tibtech</u> , Vol 8: 340-344 (1990).
	AG	Grierson, Don et al. "Does co-suppression of sense genes in transgenic plants involve antisense RNA?" <u>Tibtech</u> Vol. 9: 122-123 (1991). duplicate (see pg 7)
	AH	Bird, Colin R. et al. "Using Antisense RNA To Study Gene Function: Inhibition Of Carotenoid Biosynthesis In Transgenic Tomatoes". <u>BioTechnology</u> , Vol 9: 636-639 (1991). duplicate (page 7)
	AI	Bartley, Glenn E. et al. "Molecular cloning and expression in photosynthetic bacteria of a soybean cDNA coding for phytylene desaturase, an enzyme of the carotenoid biosynthesis pathway". <u>Proceedings of the National Academy of Sciences, USA</u> 88: 6532-6536 (1991). duplicate (page 7)
	AJ	Bartley, Glenn E. et al. "A Tomato Gene Expressed during Fruit Ripening Encodes an Enzyme of the Carotenoid Biosynthesis Pathway". <u>The American Society for Biochemistry and Molecular Biology, Inc.</u> Vol. 267, No. 8: 5036-5039 (1992). duplicate (pg 7)

page 2/0

AK	Donson, J. et al. "Systemic expression of a bacterial gene by a tobacco mosaic virus-based vector". <u>Proceedings of the National Academy of Sciences, USA</u> , Vol. 88: 7204-7208 (1991).
AL	Packer, Iris et al. "A single polypeptide catalyzing the conversion of phytoene to $\beta$ -carotene is transcriptionally regulated during tomato fruit ripening". <u>Proceedings of the National Academy of Sciences, USA</u> Vol. 89: 4962-4966 (1992).
AM	Gray, Julie et al. "Molecular biology of fruit ripening and its manipulation with antisense genes". <u>Plant Molecular Biology</u> 19: 69-87 (1992).
AN	Scolnik, Pablo and Bartley Glenn E. "Phytoene Desaturase from <i>Arabidopsis</i> ". <u>Plant Physiology</u> 103: 1475 (1993).
AO	Giullano, Giovanni et al. "Regulation of Carotenoid Biosynthesis during Tomato Development". <u>The Plant Cell</u> , Vol. 5:379-387 (1993).
AP	Dogbo, Odette et al. "Carotenoid biosynthesis: Isolation and characterization of a bifunctional enzyme catalyzing the synthesis of phytoene". <u>Proceedings of the National Academy of Sciences, USA</u> 85: 7054-7058 (1988).
AQ	van der Krol, Alexander R. et al. "An anti-sense chalcone synthase gene in transgenic plants inhibits flower pigmentation". <u>Nature</u> 333: 866-869 (1988).
EXAMINER	DATE CONSIDERED
Tung a me Kelly	7/25/04
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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Sheet 1 of 1

16/773,601

Dr. Vel. Brown

ATTY. DOCKET NO. 60-002239US

SERIAL NO. 10/103,450

8129-086-988 60-002233US

08/200,940

## SUPPLEMENTAL LIST OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

APPLICANT

Kumagai et al.

FILING DATE March 20, 2002

GROUP

June 16, 1994 February 6, 2004

1005 1636

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
me	AR	WO A 91 13994	19 Sept 1991	PCT				
	AS	WO A 91 13078	5 Sept 1991	PCT				
	AT	WO A 91 09128	27 June 1991	PCT				
	AU	EP A 0 425 004	2 May 1991	EPO				
V	AV	WO A 90 12107	18 Oct 1990	PCT				

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

me	AW	Kumagai, et al., 1995, "Cytoplasmic inhibition of carotenoid biosynthesis with virus-derived RNA," <u>Proc. Nat. Acad. Sci. USA</u> 92(5):1679-1683
	AX	Powers et al., 1994, "Intracellular Immunization of Mosquito Cells to LaCrosse Virus Using a Recombinant Sindbis Virus Vector," <u>Virus Research</u> 32(1):57-67
	AY	Misawa et al., 1993, "Functional expression of the <i>Erwinia uredovora</i> carotenoid biosynthesis gene <i>ctrl</i> in transgenic plants showing an increase of beta-carotene biosynthesis activity and resistance to the bleaching herbicide norflurazon," <u>The Plant Journal</u> 4(5):833-840
	AZ	Bramley et al., 1992, "Biochemical Characterization of Transgenic Tomato Plants in Which Carotenoid Synthesis has been Inhibited Through the Expression of Antisense RNA to pTOM5," <u>The Plant Journal</u> 2(3):343-349
V	BA	Hayes et al., 1988, "Gene amplification and expression in plants by a replicating geminivirus vector," <u>Nature</u> 334:179-182

EXAMINER

DATE CONSIDERED

Dana M. Kelly

7/25/04

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Sheet 1 of 1 10/773,601

## LIST OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

PTO FORM 1449

ATTY. DOCKET NO.

60-00223405  
60-00223405  
00001-0000-0301

APPLICATION NO.

10/103,460  
00/266,676

APPLICANT

Monto H. Kumagai, et al.

FILING DATE

February 6, 2004  
March 20, 2002  
March 9, 1999

GROUP

1636

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Jme	1.	5,539,093	09/23/96	Fitzmaurice, et al.	536	23.2	06/16/94

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
Jme	2.	EP 00 12 7988	10/15/01	European Search Report			X	
	3.	<del>WO 90/12107</del>	<del>10/18/90</del>	<del>PGT duplicate (ref. AV, page 4)</del>			X	
Jme	4.	WO 90/12084	10/18/90	PCT			X	
	5.	<del>WO 90/13078</del>	<del>09/05/91</del>	<del>PGT duplicate (ref. AS page 4)</del>			X	
	6.	<del>WO 91/09128</del>	<del>06/27/91</del>	<del>PCT duplicate (ref. AT page 4)</del>			X	
	7.	<del>WO 91/13994</del>	<del>09/10/91</del>	<del>PCT duplicate (ref. AR, page 4)</del>			X	
	8.	<del>WO 93/03161</del>	<del>02/18/93</del>	<del>PCT duplicate (ref. AC, page 2)</del>			X	
Jme	9.	WO 93/23551	11/25/93	PCT			X	
	10.	<del>EP 0425004A</del>	<del>05/02/91</del>	<del>Europe duplicate (ref. AU, page 4)</del>			X	

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(Including Author, Title, Date, Pertinent Pages, Etc.)

Jme	11.	Bramley, et al., "Biochemical characterization of transgenic tomato plants in which carotenoid synthesis has been inhibited through the expression of antisense RNA to pTOM5", <i>The Plant Journal</i> , 2(3):343-349 (1991)
↓	12.	Fray and Grierson, "Identification and genetic analysis of normal and mutant phytoene synthase genes of tomato by sequencing, complementation and co-suppression", <i>Plant Molecular Biology</i> , 22:589-602 (1993)
	13.	Heyes, et al., "Gene amplification and expression in plants by a replicating geminivirus vector", <i>Nature</i> , 334:179-182 (1988) duplicate (ref. BA page 4)
	14.	Kumagai, et al., "Cytoplasmic inhibition of Carotenoid Biosynthesis with Virus-Derived RNA", <i>Proc. Natl. Acad. Sci USA</i> 92:1670-1683 (1995) duplicate (ref. AW, page 4)
	15.	Misawa, et al., "Functional expression of the <i>Erwinia uredovora</i> carotenoid biosynthesis gene <i>cr1</i> in transgenic plants showing an increase of $\beta$ -carotene biosynthesis activity and resistance to the bleaching herbicide norflurazon", <i>The Plant Journal</i> , 4(5):893-899 (1993) duplicate (ref. AY, page 4)
	16.	Powers, et al., "Intracellular immunization of mosquito cells to LaCrosse virus using a recombinant Sindbis virus vectors", <i>Virus Research</i> , 32:57-67 (1994) duplicate (ref. AX, page 4)

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<p>LIST OF REFERENCES CITED BY APPLICANT (Use several sheets if necessary)</p> <p>PTO FORM 1449</p> <p>COPY FROM PARENT</p>	<p>ATTY. DOCKET NO. <u>60-002234US</u>  <del>60-002234US</del>          008010086US01</p>	<p>APPLICATION NO. <u>10/1103,450</u>  <del>08/260,546</del></p>
	<p>APPLICANT          Monto KUMAGAI, et al.</p>	
	<p>FILING DATE <u>February 6, 2004</u>  <u>March 20, 2002</u>  <del>June 18, 1994</del></p>	<p>GROUP  <u>1636</u>  <del>1605</del></p>

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
<i>JMC</i>	5,107,065	04-21-1992	Shewmaker, et al.			
	<del>5,231,020</del>	<del>07-27-1993</del>	<del>Jorgensen, et al.</del>	<i>duplicate (see AB page 2)</i>		

## FOREIGN PATENT DOCUMENTS

			COUNTRY	CLASS	SUBCLASS	TRANSLATION
						YES NO
<i>JMC</i>	WO 91/13994	09-19-1991	PCT			
	<del>WO 93/03101</del>	<del>02-10-1993</del>	<del>PCT</del>	<i>duplicate of AC, page 2</i>		

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

<i>JMC</i>	Bartley, et al., "A Tomato Gene Expressed during Fruit Ripening Encodes an Enzyme of the Carotenoid Biosynthesis Pathway," <i>Biol. Chem.</i> <u>267</u> (8):5036-5039 (1992)
<i>J</i>	Bird, et al., "Using Antisense RNA to Study Gene Function: Inhibition of Carotenoid Biosynthesis in Transgenic Tomatoes," <i>Bio/Technology</i> <u>9</u> :635-639 (1991)
	Dawson, et al., "Regulation of Tobamovirus Gene Expression," <i>Adv. Virus Res.</i> <u>38</u> :307-341 (1990)
<i>✓</i>	Dawson, W.O., et al., "cDNA cloning of the complete genome of tobacco mosaic virus and production of infectious transcripts," <i>Proc. Natl. Acad. Sci. USA</i> <u>83</u> :1832-1836 (1986)
	Dawson, et al., "Systemic expression of a bacterial gene by a tobacco mosaic virus-based vector," <i>Proc. Natl. Acad. Sci. USA</i> <u>88</u> :7204-7208 (1991) <i>duplicate (AK page 3)</i>
	Gray, et al., "Molecular biology of fruit ripening and its manipulation with antisense genes," <i>Plant Mol. Bio.</i> <u>19</u> :69-87 (1992) <i>duplicate (AM, page 3)</i>
<i>JMC</i>	Grierson, et al., "Does co-suppression of sense genes in transgenic plants involve antisense RNA?" <i>Trends in Biotech.</i> <u>9</u> :122-123 (1991)
<i>✓</i>	Kumagai, et al., "Rapid high-level expression of biologically active $\alpha$ -trichosanthin in transfected plants by an RNA viral vector," <i>Proc. Natl. Acad. Sci. USA</i> <u>90</u> :427-430 (1993)





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PTO/SB/08A (04-03)

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Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	<b>Complete if Known</b>	
	Application Number	10/103,450 <i>Not Yet Known</i>
	Filing Date	March 20, 2002 <i>February 6, 2004</i>
	First Named Inventor	Monto Hiroshi Kumagai
	Group Art Unit	1636
	Examiner Name	Terry Alan McKelvey
	Attorney Docket Number	60-002233US 60-002234US
Date Submitted	September 2, 2003 <i>February 6, 2004</i>	

601

## U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			

## FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
<i>me</i>	1	AOYAGI et al., "Nucleotide sequence of the tobacco mosaic virus (tomato strain) genome and comparison with the common strain genome," J.Biochem., 96(6):1915-23; 1984.	
<i>↓</i>	2	International Committee on Taxonomy of Viruses (ICTV) "00.071.0.01 Tobamovirus: Tobacco mosaic virus (TMV)" Pages 1-5. <a href="http://www.ictvdb.rothamsted.ac.uk/ictv/fs_tobam.htm">http://www.ictvdb.rothamsted.ac.uk/ictv/fs_tobam.htm</a> .	
<i>↓</i>	3	X02144: Tobacco Mosaic virus tomato strain; gi:62128.	

Examiner Signature	<i>Terry Alan McKelvey</i>	Date Considered	7/25/04
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Notice of References Cited  
(892)Application/Control No.  
Not yet known  
10/103,450Applicant(s)/Patent Under  
~~Reexamination Examination~~  
KUMAGAI ET AL.Examiner  
Terry MckelveyArt Unit  
1636

Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,231,020	07-1993	Jorgensen et al,	<del>435/472.3</del>
	B	<del>US-5,316,931</del>	<del>06-1994</del>	<del>Denson et al</del> <i>dup ref.</i>	<del>435/172.3</del>
	C	<del>US-5,022,602</del>	<del>07-1999</del>	<del>Kumagai et al,</del> <i>dup ref</i>	<del>435/468</del>
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	E	US-			
	F	US-			
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	L	US-			
	M	US-			

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

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	U	Aurora Fraile et al, A classification of the tobamoviruses based on comparisons among their 126K proteins, Journal of General Virology 1990, 71. 2223-2228.
	V	Julie Gray et al, Molecular biology of fruit ripening and its manipulation with antisense genes, APlant Molecular Biology 19: 69-87. 1992.
	W	
	X	

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
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Terry A. Mckelvey 7/25/04